Author's response to reviews

Title: Measuring patient safety culture in Taiwan: an application of Hospital Survey on Patient Safety Culture (HSOPSC) in Chinese culture

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Author's response to reviews: see over
Dear editors,

First we would like to thank you for the prompt reviewing of our paper. “Measuring patient safety culture in Taiwan: an application of Hospital Survey on Patient Safety Culture (HSOPSC) in Chinese culture” (MS: 5727961023123037)

We have revised the paper under the guidance of the reviewers’ comments. The requirements for ethical approval for this study are also addressed in the revised manuscript. Following this letter are the point-by-point responses to the comments by the reviewers.

Sincerely yours,

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Responses to reviewer comments

First, I would like to thank the reviewers for making some excellent suggestions to make valuable improvements to the paper. The paper has been revised under the guidance of the reviewers’ comments and the details about the revision are given as follows.

**Reviewer:** Caroline Brand  
**Reviewer’s report:**  
Major Revisions required  
General comments  
The topic, measuring the safety culture of health care organizations, is important, timely and of interest to readers.

The paper needs considerable editing.  
There is a good deal of repetition within and between sections.

The paper would be best split into two – one paper more carefully detailing the tool assessment and validation for the Taiwanese population and a second paper presenting and discussing in more detail the survey methods and results.

*Response:* The manuscript has been revised and much effort had been made to reduce repetition. We have also revised the main objective of the paper so that it is adequate to stay as one manuscript, as suggested by the editors.

Specific Comments  
Aims  
The paper states two objectives; firstly to use the HSOPSC tool to examine patient safety culture in Taiwan and secondly to explore differences between East and West. However, the second aim is not explored in any more than general terms and is therefore not a strong nor completed objective and the paper appears to be written with the following objectives; firstly, to assess the HSOPSC tool attributes in the Taiwanese population and secondly to use the tool in a survey to examine patient safety culture in Taiwan. The authors need to carefully review their main objective/s and more clearly articulate these in the introduction section.
Response: Thank you for the suggestion, the main objective of the paper has been rephrased as “…to use the HSOPSC measurement tool to evaluate patient safety culture in Taiwan’s hospitals and attempt to provide explanation of some of the phenomena in patient safety culture that are unique in Chinese culture.”

Introduction
The material in the introduction needs to be reordered to remove duplication of ideas and allow the rationale to develop in a more logical fashion. Close attention needs to be paid to removing statements of little relevance that have no relationship to following sentences eg p5 – “previous researchers believed…..adverse events occurred – has no lead on to the next statement about the complexity of patient safety culture.

Response: The introduction section has been rewritten to remove irrelevant statements and to minimize duplication.

There is brief consideration of the difference between culture and climate but this information is again spread in different sections of the paper and would be best collated into the early part of the paper to strengthen the rationale for using the culture survey tool. – if the audience is a global audience the information about the use of the SAQ in Taiwan is probably not necessary for this paper. The rationale for needing the survey in Taiwan is based on adverse event reporting – however no denominator is provided so we have no idea of the burden of the problem . The reference to SAARS is irrelevant.

Response: The discussion of the rationale for using the survey tool in Taiwan has been collated and moved to the beginning of the introduction section. The introduction about SAQ in Taiwan has been removed.

The background and description of the HSOPSC similarly needs to be better ordered. Whilst the content is covered, there is no information as to how this content was developed, whether the scaling is appropriate and there is variable inclusion and description of which aspects of measurement attributes have been tested. If the paper is to focus purely in survey results then there could be reference to the survey tool development and validation provided with less detail about the tool, however as the authors have chosen to focus on
performance of the tool within the Taiwanese population these details are more necessary. For this reason I suggest breaking the material into two papers as outlined above.

Response: The introduction of HSOPSC tool has been moved to the method section. We provide just enough details for the readers to understand the dimensions and items covered by tool. The aim of the paper is to use HSOPSC to investigate patient safety culture in Taiwan. At the current stage, we do not intend to perform full validation on using the tool for the Taiwanese population. The confirmatory factor analysis (CFA) results were included for completeness and to give a preliminary indication of the adequacy of the HSOPSC assessment on the data in this study.

Methods
There is inadequate detail about the adaptation and face validity/content validity testing in Chinese. Were the translations ‘backtranslated,’ and if so how many times and by whom?

Response: More details regarding translation and content validity testing are added in the first subsection in the methods. In this study, no backward translation was performed.

In the results a number of statistical results are provided for testing internal consistency and internal validation which are not explained in the methods.

Response: Descriptions of internal consistency and internal correlation testing are added in the “Data analysis” subsection in the methods.

The methods of randomization are not provided in adequate detail. There is no explanation for the way in which sampling occurred, how it was adequate to represent all the hospitals, nor how internal sampling within hospitals occurred and how this adequately represented all professional groups within a proportional allocation. If the aim was to compare with West results was a sample size calculation performed on which the basis of sampling occurred?

Response: More details regarding hospital selection criterion and internal sampling method are provided in the methods.
Results
The authors do not provide any proportional results ie 42 hospitals of a total 50 randomised but of the total number of hospitals in Taiwan that would have been eligible for inclusion? – similarly for medical centres, regional hospitals & community hospitals. Similarly for professional groups. 38% were in a supervisory capacity – does this reflect the workforce in Taiwan hospityals – sounds v top heavy?

*Response:* The details regarding hospital selection criterion and internal sampling method are provided in the methods. The definition for supervisor used in this study is rather broad, from head of medical and nursing department, chief resident, laboratory director, head nurse, to team leaders who might supervise only a handful of people. This is rather common in Taiwan to refer them to supervisors. We believe this might be the reason that the number seems high to you.

There needs to be consistency in reporting results eg n(%) 

*Response:* Corrected.

There is discussion in the results section that should be removed

*Response:* Corrected.

There is a statement that there are inadequate human resources based on the study however the study provides results of perceived, not actual quantitative assessments therefore this statement is not justified.

*Response:* The statement has been rephrased as “...most of the respondents feel that staff allocation is not adequate to handle patient safety related workload.” in the discussion.

What are the correlations between responses and staff position or in hospital safety training (is the study powered to examine these correlations?)

*Response:* This study did not examine those correlations. This could be a topic to explore for future study.
A table summarizing the model would be useful

*Response: A table summarizing the CFA results of the model is added (Table 3).*

Table 2 includes categorical and continuous data analysis which is confusing.

*Response: Corrected.*

Table 3 is unclear. Why are R2 being provided for each factor and not just for the overall model?

*Response: The R2 values represent the predicting power of individual dimension on patient safety culture.*

Why is Chronbach’s alpha so low and what are the implications?

*Response: The Cronbach’s α for this study ranged from 0.51 to 0.84, slightly lower than the AHRQ data (0.63 to 0.84), this implies that the consistency of the responses on each survey item for the data in this study is slightly less than the AHRQ data.*

Discussion
The key domains of interest that differ from other studies are identified but not discussed in enough detail especially issues around response bias and cultural differences. How are teams trained in Taiwan?

*Response: More discussions about those issues have been provided in the discussion section. In Taiwan, hospital staffs generally could participate in patient safety training either through attending conference and workshops outside of the hospitals, or taking patient safety courses within the hospitals.*

The survey results will only be useful if changes can be made. Are there examples where this has occurred? What would need to be done to facilitate change to embedded cultural behaviours?
Response: This is an exploratory research regarding assessing patient safety culture in Taiwan. We hope that the findings of this study will encourage more discussions on the issue and stimulate more studies on the underlying dimensions and psychometric properties of the survey tool in Taiwan hospital settings.

Quality of written English: Not suitable for publication unless extensively edited

Response: The revised manuscript had been reviewed and edited for English writing by an English technical writer.
Reviewer: Johan Hellings
Reviewer's report:
This is a very interesting study, but there are several important remarks to make:

1. In this study the researchers have chosen to use a sampling method with 50 hospitals, randomly selected. In these 50 hospitals 20 staff members were selected with roughly 6 physicians, 12 nurses and 2 administrators. It is unclear why this method has been chosen and this should be motivated clearly. Most patient safety culture research, but also the QHRQ database, focuses on the whole (clinical) population of the hospital.

Response: More details regarding hospital selection criterion and internal sampling method are provided in the methods. This is an exploratory research regarding assessing patient safety culture in Taiwan, expanding the scale of the survey to cover the whole population of the hospital could be the objective for future research.

2. What is the motivation of the administrators proportion in the sample size, also from the perspective that 92.5% of them did not have direct contact with the patient? But, and that is a serious problem, the sample size consists 38.8% supervisors and this proportion can’t be representative for the hospital population.

The data need to represented form this perspective:
- what are the scores on the 12 dimensions for the supervision group
- what are the scores on the 12 dimensions for the non – supervision group.

This is important while supervisors tend to give better scores, certainly in evaluating their own work in dimension 3: management support for patient safety.

Response:
As suggested by the original HSOPSC user guide, the survey can be completed by all types of hospital staff—from housekeeping and security to nurses and physicians. Hospital staffs who may not have direct contact or interaction with patients but their work might directly or indirectly affect patient care, for example, a human resource personal may in charge of staff allocation to handle patient safety related workload.

The definition for supervisor used in this study is rather broad, from
head of medical and nursing department, chief resident, laboratory director, head nurse, to team leaders who might supervise only a handful of people. This is rather common in Taiwan to refer them to supervisors. We believe this might be the reason that the number seems high to you. It would be interesting to examine the correlation between responses and staff position, this could be a topic to explore for future study.

3. It is unclear why most of the respondents worked in their hospital for an average period of 5 years. This is low, compared with other patient safety culture studies. Explanation?

   Response: We don’t have the exact answer to this question; however, the average age of the respondents in this study was 35 years old, which is young relative to other studies, we think this may be one of the reasons.

4. The statement: “in Western culture, the frequency of events reported represents employees’ commitment to the organisation, can committing to the organisation is considered a top priority for employees” need to be clarified.

   Response: The statement has been removed since it is not relevance to the discussion of the results.

5. In this study no critical reflexions about the research approach, the weak points or the concerns are formulated.

   Response: More discussions and thoughts regarding the research approach are given in the revised manuscript.